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Atomsenses Smoke/Vape Sensor

Product Specification

Applicability

This guide applies to the following Atomsenses products, unless otherwise specified:

Model	Description
AS5-LN9	- Smoke/Vape Sensor

Declaration of Conformity

Atomsenses sensors and other products comply with the essential requirements and relevant provisions of FCC, CE/EMC, and RoHS standards.

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Hardware Introduction

The Smoke/Vape sensor is designed to detect smoking activity in indoor public spaces, making it ideal for use in smoke-free environments such as offices, hospitals, schools, hotels, and other regulated areas. When smoking is detected, the device cyclically plays a pre-recorded voice prompt to remind occupants of the no-smoking policy. When integrated with an IoT gateway, the monitor wirelessly transmits real-time alarm notifications via LoRa technology to a centralized management platform, enabling immediate alerts and remote monitoring.

Features

- Advanced Core Components:
  Main controller equipped with imported MCU for high-performance processing.
- Multi-Sensor Detection System:
  Built-in PM2.5/PM10, TVOC, and carbon monoxide sensors to detect smoking activity through real-time analysis of environmental data changes.
- Customizable Voice Alerts:
  Integrated voice prompts (customizable messages) cyclically broadcast warnings to reinforce smoke-free policies effectively.
- Adjustable Sensitivity:
  Three sensitivity levels to accommodate diverse environments and usage scenarios.
- Dual Connectivity Options:
  Wired: RS485 output for direct communication.
  Wireless: LoRa technology transmits alerts via gateways to centralized platforms for remote monitoring.
- Dual-Purpose Functionality:
  Detects smoking activity while independently monitoring PM2.5/PM10 levels for comprehensive air quality assessment.
- Enhanced Airflow Design:
  Unique built-in intake fan accelerates air circulation, enabling rapid detection and immediate alerts.
- Premium Build Quality:
  Custom-molded housing crafted from flame-retardant ABS material, combining durability with an elegant design.
- Visual Status Indicators:
  Top-mounted LED lights for clear visibility of operational and alarm statuses.

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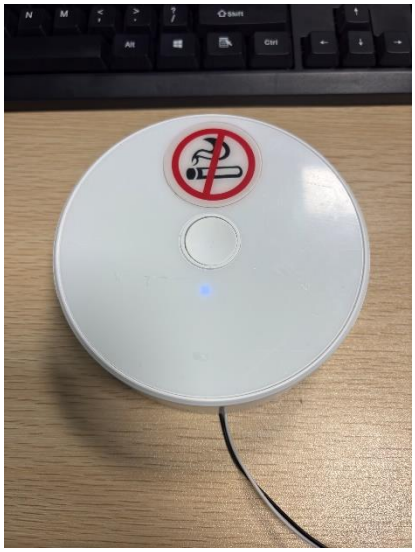
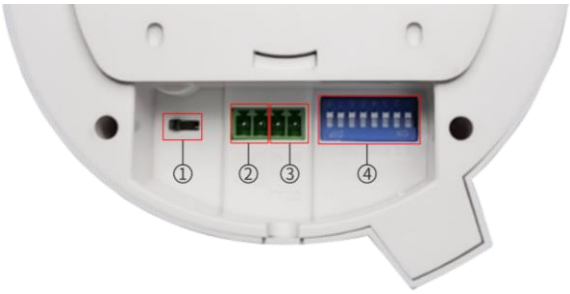
Device Appearance



Dimensions (mm) and usage instruction



① **Sensitivity** – Three adjustable levels. Factory default: Level 1 (highest sensitivity).
② **Power Interface** – VCC: DC12V positive; GND: Power ground.
③ **RS485 Interface** – A+: RS485 positive; B-: RS485 negative.
④ **RS485 Address** – 8-bit address code (default: 0xFF, user-configurable). For LoRa devices: 3-byte UUID required. If no UUID is programmed, the least significant byte defaults to the RS485 address (UUID = 0x00, 0x00, 0xFF).
⑤ **Blue LED** – Status indicator (steady on = normal operation).
⑥ **Red LED** – Alarm indicator (steady on = smoking detected).
⑦ **Test Button** – Test-only function. Press to trigger voice prompt and LoRa data upload.

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Technical specifications and standards

Item	Description
Frequency Bands (optional)	CN470/IN865/RU864/EU868/US915/AU915/KR920/AS923-1&2&3&4
Particulate Matter Range	0–999 μg/m^3
Particulate Matter Resolution	1 μg/m^3
Particulate Matter Accuracy	±10%
Monitoring Area	20 m^2 (square meters)
Alarm Modes	Voice prompt / Wired upload (RS485/I/O) / Wireless upload (LoRa, LoRaWAN, Wi-Fi, 4G)
Operating Voltage	DC12V
Standby Current	<120 mA
Alarm Current	<220 mA
Operating Temperature	-10°C to 60°C
Operating Humidity	5%–80% RH (non-condensing)
Dimensions	φ120mm × 42mm (diameter × height)
Weight	200g
Mounting Method	Ceiling mount

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